Power and Flexibility Offering You a Choice to Meet Your Automation Challenges

With technology ranging from compact and economical micro programmable logic controllers (PLCs) to cutting-edge programmable automation controllers (PACs) and the open flexibility of industrial PCs, GE Fanuc has a wide array of off-the-shelf solutions offering you a choice to meet your exact needs. And because we integrate these flexible automation products with a single powerful software suite providing the universal engineering development environment for all of our controllers, motion and operator interface/HMI, both your knowledge and your applications are portable as you move from platform to platform and expand from generation to generation.

PACSystems*

The new GE Fanuc PACSystems delivers the first Programmable Automation Control – one control engine and one development environment for multiple hardware platforms. PACSystems offers enhanced processing and communications speed and programming capacity over existing PLC technologies for high-speed processing, data acquisition and memory-intensive tasks like recipe storage and data-logging.

Both the VME-based RX7i and the PCI-based RX3i provide powerful CPUs and high-bandwidth backplanes, making complex programming easy to implement and faster to execute. The PACSystems also offers an industry leading migration platform for Series 90 PLCs with interchangeable I/O modules and easy software program conversion tools. PACSystems provide:

The Best of PLCs combined with the Best of PCs

- Multi-discipline, deterministic control for every application
- Application portability to multiple platforms

Performance and Productivity

- Follow technology enhancements for continuous performance improvement
- Single multi-discipline development platform

Flexibility and Openness

- Users' choice of appropriate platform, programming language and communication scheme
- Connectivity to all levels of production operations

Obsolescence Avoidance

- Bring applications forward, protect your investments in intellectual property, equipment and installed costs

PACSystems RX7i

RX7i is the first member of the ground-breaking PACSystems family of programmable automation controllers (PACs). Designed to address mid- to high-end applications for OEMs, integrators, and end users, the RX7i is ideally suited for integrated solutions that require open architecture, large memory, distributed I/O, and high performance.

PACSystems RX3i

Using the same control engine as the RX7i, the RX3i offers a high level of automation functionality in a compact, cost-effective package. The PACSystems portable control engine provides high performance on several different platforms, allowing OEMs and end users with application variability to choose the exact control system hardware that best suits their needs.

Series 90* PLCs

Series 90-70

Series 90-70 PLCs have become the industry standard for complex applications requiring safety systems with large numbers of I/O and large amounts of process memory. The open architecture backplane of the Series 90-70 unlocks the versatility of hundreds of unique VME-based cards for applications involving elements such as vision, highly specialized motion, or fiber-optic networks.

You can customize your system architecture even further with a variety of available I/O and specialty modules as well as motion controllers for a broad range of stand-alone or distributed system configurations.

Series 90-30

With its modular design, over 100 different I/O modules, and a range of CPU options, Series 90-30 offers you the versatility to configure a system based on your specific performance needs. Superior networking and communications capabilities enable you to network, transfer data, upload and download programs and perform diagnostics over one non-proprietary network.

Motion control integrated into the Series 90-30 facilitates high performance point-to-point applications, and supports a variety of motor types and system architectures.

VersaMax* PLC and Distributed I/O

Modular and scalable, VersaMax offers big PLC power in a small package. It is part of an innovative control family that combines a powerful CPU with a broad selection of discrete, analog, mixed and specialty I/O modules, terminations and power supplies, as well as communications modules to link to a variety of networks.

VersaMax Nano and Micro PLC

Palm-sized, powerful and economical, VersaMax* Nano and Micro PLCs give you all-in-one construction to save panel space. Its easy application provides you with a quick solution by snapping onto a DIN-rail or mounting in a panel.

Durus* Controllers

The Durus Controllers are loaded with features such as easy to use built-in display/keypad, high current outputs and multiple communication options. These compact and affordable controllers are ideal for simple control applications including lighting control, gate control, HVAC, pump control and much more.

QuickPanel* Control

QuickPanel Control combines flexible, integrated control with visualization on a single, rugged hardware platform for more functionality in a smaller space. It provides access to a broad range of I/O, communicates via a variety of networks, and enables remote monitoring of your systems.

Genius* Distributed I/O

In a host of industries, from steel to food processing to automotive, more than half a million Genius blocks are helping companies meet the challenge of an increasingly competitive marketplace. The Genius family includes 20 different I/O blocks, a variety of PLC interface modules, and a growing number of third-party interfaces.

VersaPoint Distributed I/O

Fast installation, reduced wiring, and more efficient use of cabinet space all come together to make VersaPoint Distributed I/O an exceptional value. Its modular construction is easily adaptable to scores of applications, and the extensive built-in diagnostics make identifying faults a routine matter, maximizing uptime.

VersaMax IP I/O

VersaMax IP I/O is designed for IP65 and IP67 environments to offer the ruggedness and reliability of a standard I/O system installed in a NEMA 4 cabinet, without the cost and effort to build the cabinet. Once installed, VersaMax IP's diagnostics make troubleshooting a snap.

PACSystems* RX7i Controllers

Built on a standard embedded open architecture, the PACSystems RX7i is the first member of the groundbreaking PACSystems family of programmable controllers (PACs). The RX7i features a single control engine and universal programming environment to provide application portability across multiple hardware platforms. Designed to address mid- to high-end applications for OEMs, integrators, and end users, the RX7i is ideally suited for integrated solutions that require open architecture, large memory, distributed I/O and high performance.

The RX7i Features

- Pentium® CPUs for your every need, from Celeron 300mHz to M Class 1.8 Ghz
- A VME64 Backplane providing up to four times the bandwidth of existing Series 90-70 systems
- 10/100 Ethernet built into the CPU, with easy cabling RJ-45 dual ports connected through an auto-sensing switch, so there is no need for additional switches or hubs rack to rack
- Up to 64 MB memory for fast execution, storage of the complete program with all documentation—all in one CPU
- Supports existing Series 90-70 modules and expansion racks, VME modules and GENIUS networks—protecting your hardware investment

Proficy Machine Edition

Proficy Machine Edition is an advanced software environment for the development and maintenance of machine level automation. Visualization, motion control, and execution logic are developed with a single programmer.

CPUs pgs 12-13
Racks page 14
Power Supplies page 15
Communications Modules page 28

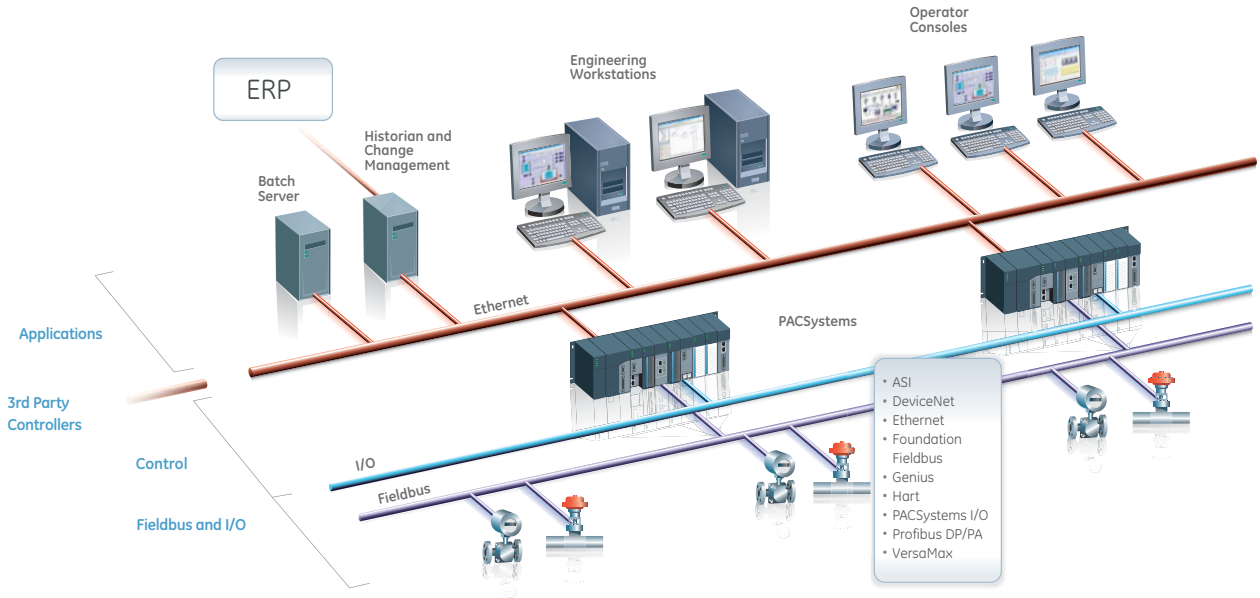
I/O Interface Modules page 27
Specialty Modules page 29
Discrete I/O Modules (input) pgs 16-18
Discrete I/O Modules (output) pgs 22-24
Analog I/O Modules (input) pgs 19-21
Analog I/O Modules (output) pgs 25-26
Expansion Power Supplies page 30
Expansion Racks page 31
Accessories page 32

Publication Reference Chart

GFK-2222	PACSystems CPU Reference Manual
GFK-2223	PACSystems RX7i Installation Manual
GFK-2224	TCP/IP Ethernet Communications for PACSystems
GFK-2225	PACSystems Station Manager User's Manual
GFK-2235	PACSystems RX7i User's Guide to Integration of VME Modules
GFK-2259	C Programmer's Toolkit for PACSystems User's Manual
GFK-2300	PACSystems RX7i Memory Xchange Modules User's Manual
GFK-2308	PACSystems Hot Standby CPU Redundancy User's Guide

Proficy* Process Systems Overview

Proficy Process Systems is a state-of-the-art, scalable, fully-integrated system for process automation and control. It provides the hardware and software needed for a complete process control system. Whether your business has continuous or batch oriented process control needs, Proficy Process Systems will deliver results. Based on contemporary, yet well proven technologies, Proficy Process Systems combines the power of traditional DCS systems with the flexibility, freedom and affordability of a PLC-based approach.



Architecture Overview

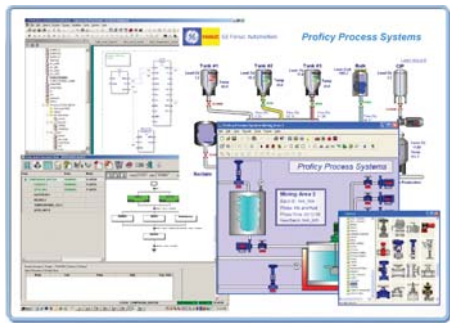
The Proficy Process Systems architecture is designed to provide a modular and expandable system to meet your most demanding process control needs. Proficy Process Systems can uniquely range from a small, one-machine architecture to a large, multi-machine architecture. This approach means you can start small and expand your system over time, at your pace. The system consists of several layers.

Applications Layer

The Applications Layer contains the software that powers the information capabilities of Proficy Process Systems, featuring:

Engineering Workstation

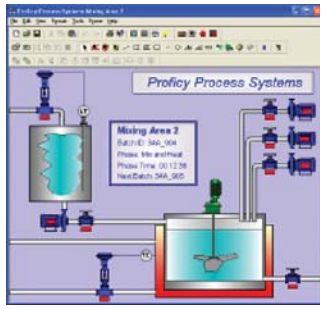
This is where you design, create, and maintain your system's configuration. With an advanced Logic Developer, you can create your control strategies in Function Blocks, Ladder Logic, or Structured Text for the PACSystems* controllers.



Engineering Workstation

Operator Console

This is where your operators monitor and control the process. Choose between our two industry leading HMI/SCADA visualization technologies for your system – CIMPLICITY* or iFIX*. The consoles communicate with the PACSystems controllers through our Global Namespace.



Operator Console

Historian

The Historian is designed specifically for handling process data. It provides high performance storage and retrieval with sub-second collection and millisecond time-stamping.

Change Management

Change Management provides version control for your process control strategies, including audit trail capabilities.

Batch Execution

Batch Execution is the perfect option for batch-oriented processes. With advanced batch management, formulation management, batch direct, and tight linkage with our Batch Analysis option, you can optimize campaigns and batch runs.

ERP Connectivity

GE Fanuc has closed the gap between automation and information with our Proficy Production Management software products and ERP connector. Now you can link your control system to your business systems to truly drive operational excellence in your business.

Controllers

The PACSystems RX7i and RX3i give Proficy Process Systems its flexibility, featuring a common engine which allows you to take programs that are created in one controller and easily move them to another.

Proficy Process Systems also features Control Memory Exchange, a breakthrough technology incorporated from GE Fanuc's Embedded Systems Business. Through high-speed fiber optics, Control Memory Exchange allows data in one controller to be exchanged and shared with another controller at over a 2 giga baud rate. This allows you to synchronize controllers for distributed control, or reflect the memory state of one controller to another for redundant operations.

PACSystems RX7i

PACSystems RX3i

Fieldbus and I/O

GE Fanuc has always taken an open approach with our products and technologies. We provide our customers with the best possible technology and give them the freedom to work with the devices and instruments of their choice.

Proficy Process Systems continues with that tradition. We understand that when it comes to process control, there are several choices for Fieldbuses. That's why we chose an Open Fieldbus approach to our system which supports the major Fieldbuses including:

- Foundation Fieldbus
- Profibus™
- Hart
- AS-I Interface
- Ethernet

We also provide you with a comprehensive portfolio of I/O, allowing you to choose the right strategy to meet your needs. Through OPC, native drivers, and by teaming with companies that specialize in Fieldbus and I/O connectivity, we can satisfy your connectivity needs – putting you in control of your Fieldbus strategy.

Series 90*-70 PLCs

GE Fanuc's Series 90-70 PLC provides a comprehensive solution that is equal to the most demanding applications. With our CPX family of CPUs, the Series 90-70 offers more for your automation dollar–more computing power, more memory for your applications, and more communications and redundancy capabilities. And with a wide range of isolated and high-density VME analog I/O modules, the Series 90-70 provides even more flexibility for a variety of applications.

The Series 90-70 Features

- Open architecture based on the VME-bus standard
- Redundancy for critical applications when combined with Genius* I/O – Genius Modular Redundancy (GMR) systems and Hot Standby systems
- A wide variety of communications options including Ethernet TCP/IP, reflective memory, Genius LAN and serial communications modules

Proficy* Machine Edition

Proficy Machine Edition is an advanced software environment for the development and maintenance of machine level automation. Visualization, motion control, and execution logic are developed with a single programmer.

CPUs pages 94-95

Power Supplies page 98

I/O Interface Modules page 110

Specialty Modules page 112

Accessories page 113

Racks pages 96-97

Communications Modules page 111

Discrete I/O Modules (input) pages 99-101

Discrete I/O Modules (output) pages 105-107

Analog I/O Modules (input) pages 102-104

Analog I/O Modules (output) pages 108-109

Publication Reference Chart

GFK-0262	Series 90-70 Programmable Controller Installation Manual
GFK-0265	Series 90-70 PLC Reference Manual
GFK-0448	Series 90-70 Programmable Controller User's Guide to the Integration of 3rd Party VME Modules
GFK-0582	Series 90 PLC Serial Communications User's Manual
GFK-0600	Series 90-70 Programmable Controller Datasheets Manual
GFK-0646	C Programmer's Toolkit for Series 90-70 PLCs User's Manual
GFK-0868	Series 90 Ethernet Communications User's Manual
GFK-1527	Series 90-70 Enhanced Hot Standby CPU Redundancy User's Guide
GFK-1541	TCP/IP Ethernet Communications for the Series 90 PLC User's Manual
GFK-2017	Series 90-70 Genius Bus Controller

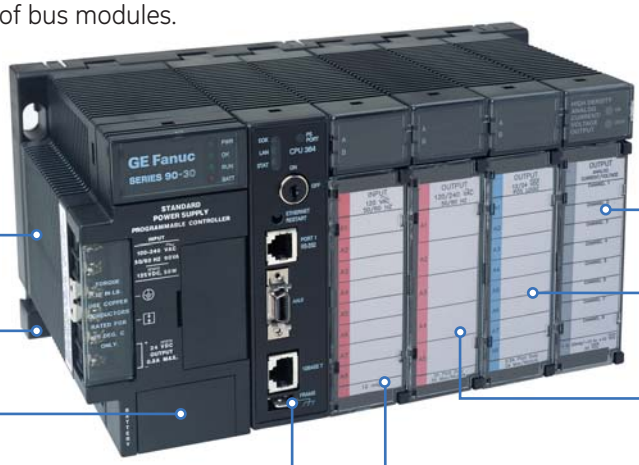
Series 90*-30 PLCs

The Series 90-30 PLCs are a family of controllers, I/O systems and specialty modules designed to meet the demand for versatile industrial solutions. With a single overall control architecture and modular design, the Series 90-30 has been the PLC of record in over 200,000 applications, such as high speed packaging, material handling, complex motion control, water treatment, continuous emissions monitoring, mining, food processing, elevator control, injection molding, and many more.

One reason for the versatility of the Series 90-30 is the large variety of discrete and analog I/O modules (over 100 modules), as well as specialty modules, that are available. In addition, GE Fanuc offers a wide range of high-level communication options, from a simple serial connection to a high-speed Ethernet interface and a number of bus modules.

Proficy* Machine Edition

Proficy Machine Edition is an advanced software environment for the development and maintenance of machine level automation. Visualization, motion control, and execution logic are developed with a single programmer.



CPUs pages 116-118

Baseplates page 119

Power Supplies pages 120-121

Communications Modules page 144

Accessories pages 155-156

Configuration Guidelines page 157

Networks and Distributed I/O Systems pages 141-143

Specialty Modules pages 135-140

Analog I/O Modules (input) pages 125-127

Analog I/O Modules (output) pages 133-134

Discrete I/O Modules (input) pages 122-124

Discrete I/O Modules (output) pages 128-132

Power Transducer Modules page 145

Pneumatic Module page 146

Motion Modules pages 148-151

Expansion Modules page 152

Portable Program Download Device (PPDD) pages 153-154

α and βi Series Servo Amplifiers page 158

VersaMotion pages 159-167

Publication Reference Chart

GFK-0255	Series 90 Programmable Coprocessor Module & Support Software User's Manual
GFK-0293	Series 90-30 High Speed Counter User's Manual
GFK-0356	Series 90-30 PLC Installation and Hardware Manual
GFK-0412	Series 90-30 Genius Communications Module User's Manual
GFK-0467	Series 90-30/20/Micro PLC CPU Instruction Set Reference Manual
GFK-0529	Series 90 PLC SNP Communications User's Manual
GFK-0582	Series 90 PLC Serial Communications Driver User's Manual
GFK-0585	Series 90 PLC SNP Communications Driver User's Manual
GFK-0631	Series 90-30 I/O Link Slave Interface User's Manual
GFK-0664	Series 90-30 Axis Positioning Module (Power Mate-APM) Programmer's Manual
GFK-0695	Series 90-30 Enhanced Genius Communications Module User's Manual
GFK-0712	Series 90 Digital Event Recorder User's Manual
GFK-0726	State Logic Processor for Series 90-30 PLC User's Guide
GFK-0771	C Programmer's Toolkit for Series 90 PCMs User's Manual
GFK-0772	PCM C Function Library Reference Manual
GFK-0781	Power Mate APM for Series 90-30 PLC Follower Mode User's Manual
GFK-0814	C Programmer's Toolkit for Series 90 PCM Quick Reference Guide
GFK-0823	Series 90-30 I/O Link Master Module User's Manual
GFK-0828	Series 90-30 Diagnostic System User's Guide
GFK-0840	Power Mate APM for Series 90-30 PLC Standard Mode User's Manual
GFK-0854	Series 90 Sequential Function Chart Programming Language User's Manual
GFK-0898	Series 90-30 PLC I/O Module Specifications Manual
GFK-1028	Series 90-30 I/O Processor Module User's Manual
GFK-1034	Series 90-30 Genius Bus Controller User's Manual
GFK-1037	Series 90-30 FIP Remote I/O Scanner User's Manual
GFK-1056	Series 90-30 State Logic Control System User's Manual
GFK-1084	TCP/IP Ethernet Communications for the Series 90-30 PLC User's Manual
GFK-1179	Installation Requirements for Conformance to Standards
GFK-1186	TCP/IP Ethernet Communications for the Series 90 PLC Station Manager Manual
GFK-1213	Series 90-30 FIP Bus Controller User's Manual
GFK-1256	Power Mate for Series 90-30 User's Manual
GFK-1322	Series 90-30 PLC LonWorks Bus Interface Module User's Manual
GFK-1411	Series 90-30 System Manual for Windows® Users
GFK-1464	Motion Mate DSM302 for Series 90-30 PLCs User's Manual
GFK-1466	Temperature Control Module for the Series 90-30 PLC User's Manual
GFK-1541	TCP/IP Ethernet Communications for the Series 90 PLC User's Manual
GFK-1734	Power Transducer for the Series 90-30 PLC User's Manual
GFK-1868	Proficy Machine Edition Getting Started Guide
GFK-2121	Series 90-30 Profibus Modules User's Manual
GFS-062	Series 90-30 Quick Reference Guide for Maintenance
GFZ-0085	Series 90-30 Troubleshooting Pocket Guide
IC690CDU002	InfoLink for PLC CD-ROM

Portable Program Download Device (PPDD)

The Portable Program Download Device enables the user to easily upload and download Series 90-30 configuration and logic from/to a USB Memory Stick. Portable Program Download Device (PPDD) will support commercial memory stick devices using USB connection. The purpose of the PPDD is to allow users to store and download their logic applications and configuration to GE Fanuc Series 90-30 PLCs without the need of a PC. The PPDD plugs into the 15 pin RS-485 port on the Series 90-30 CPU base power supply. The RS-485 port provides the power for the PPDD. Series 90-30 logic and configuration files can be zipped and easily emailed to remote locations for Series 90-30 downloads.

There are many advantages of the PPDD such as:

- No PC required to backup applications or download applications
- No expensive travel to perform field upgrades, just email the file to the remote location
- Compatible with commercial off the shelf USB Memory Sticks
- The PPDD can be panel mounted, DIN rail mounted or hand held
- Supports diagnostics to ensure that the CPU is compatible with the application
- OEM Password Protection supported
- Simple to operate, LEDs to show activity, error and status. Push button to start download and selector switch for direction of download, to the PLC or to the memory stick.
- Designed for the industrial environment UL and CE (not Class 1 Div 2 approved)

PPDD features:

- Slide switch for direction of data storage
- Status and Diagnostic LEDs

LEDs Status

	Error (Red)	Status (Green)
LED On Steady	On when there isn't a Memory Stick attached	On after button has been pushed and name in PLC matches and when download is complete
LED Flashing Fast Flash (500msec on 500msec off) Slow Flash (1 sec on 1 sec off)	Flashing when CPU doesn't match or Memory Stick doesn't have the proper file Flashing if Verify fails	Slow Flash During Download Fast Flash when CPU type matches but name in PLC doesn't match
LED Off	Off during normal conditions with no errors	Off prior to button being pushed for download

VersaMax* I/O and Control

With its innovative modular architecture, VersaMax combines power and versatility to help provide performance in a compact and affordable control solution.

The VersaMax product family can be used as I/O, as a PLC, and as distributed control for up to 4096 I/O points. With its modular architecture, intuitive features, and unparalleled ease of use, it helps save machine builders and end users time and money.

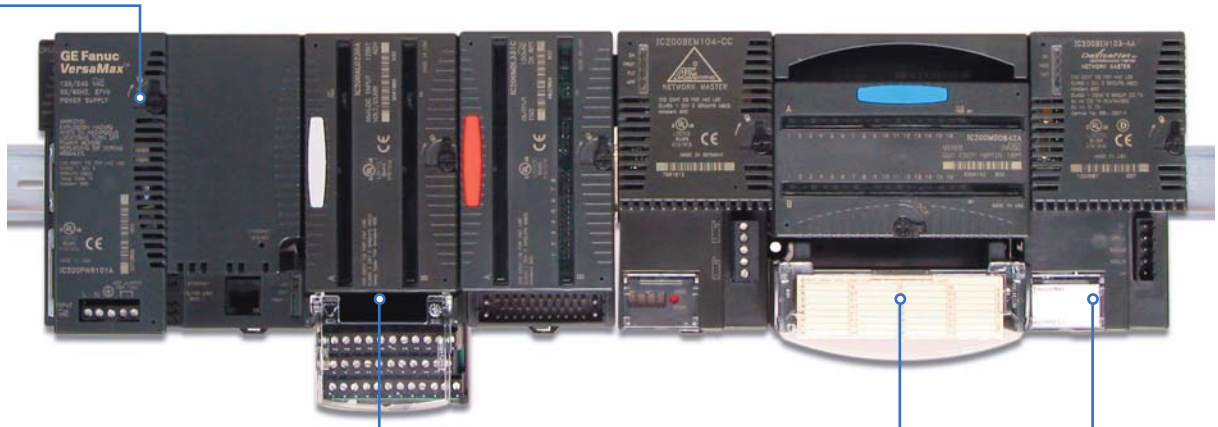
VersaMax is the first GE Fanuc control product created using the unique Six Sigma design process. Six Sigma combines global research and development techniques, extensive customer needs analysis, and rigorous quality control standards.

The VersaMax I/O and Control product family features a broad selection of I/O modules, terminations, power supplies, and network interface options to enhance your control capability.

Proficy* Machine Edition

Proficy Machine Edition is an advanced software environment for the development and maintenance of machine level automation. Visualization, motion control, and execution logic are developed with a single programmer.

Power Supplies pages 176-177



Analog I/O Modules pages 191-195

Discrete I/O Modules pages 178-190

Network Interface Modules page 201

CPUs page 170
Carriers pages 171-173
I/O Interposing Bases pages 174-175

Expansion Modules page 198
RTD and Thermocouple Modules page 196
Specialty Modules page 197
Remote I/O Units pages 199-200
Serial Communications page 202

Accessories page 203
Configuration Guidelines pages 204-205

Publication Reference Chart

GFK-1179	Installation Requirements for Conformance to Standards
GFK-1503	VersaMax PLC User's Manual
GFK-1504	VersaMax Modules, Power Supplies, and Carriers User's Manual
GFK-1533	VersaMax System DeviceNet Communications Modules User's Manual
GFK-1534	VersaMax System Profibus Network Modules User's Manual
GFK-1535	VersaMax System Genius Network Interface Unit User's Manual
GFK-1563	VersaMax I/O and Industrial Networking Application Guide
GFK-1697	VersaMax System AS-i Network Master Module User's Manual
GFK-1847	Remote I/O Manager User's Manual
GFK-1852	VersaMax Serial to Ethernet Adapter User's Manual
GFK-1860	VersaMax System Ethernet Network Interface Unit User's Manual
GFK-1868	Proficy Machine Edition Getting Started Guide
GFK-1876	VersaMax Ethernet Station Manager Manual
IC690CDU002	InfoLink for PLC CD-ROM

VersaMax* Nano and Micro Controllers

Don't let size fool you. Although they are easy on valuable panel space, the VersaMax Nano and Micro PLCs are big on features. For high-volume applications where cost and fast processor speeds are an issue, the VersaMax Nano is the PLC of choice. For additional functionality, the modular VersaMax Micro offers the features and the flexibility to match application needs in such industries as food processing, chemicals, packaging, water and wastewater, construction equipment and plastics.

For tight spaces, the VersaMax Nano PLC is the perfect solution. Thanks to its all-in-one construction, installation is a breeze. All you have to do is snap it onto a DIN rail or screw it into a panel. With the VersaMax Nano, you save on initial as well as life cycle costs.

The small-footprint VersaMax Micro PLC offers the flexibility of modular design and a variety of built-in features, including up to 64 I/O points (expandable to 170 I/O points), fast cycle times, a robust instruction set and extensive memory that multiplies your programming options.

Proficy* Machine Edition

Proficy Machine Edition is an advanced software environment for the development and maintenance of machine level automation. Visualization, motion control, and execution logic are developed with a single programmer.

Publication Reference Chart

GFK-1645	VersaMax Micro PLCs and Nano PLCs User's Manual
IC690CDU002	InfoLink for PLC CD-ROM

Nano PLCs, page 209

Micro PLCs, pages 210-217

Expansion Units, pages 218-225

Accessories, pages 231-232

Configuration Guidelines, pages 233-234

DataPanels Operator Interfaces, page 226

Communications Options, pages 227-228

Portable Program Download Device (PPDD), pages 229-230

VersaMotion Servo Motors and Amplifiers, pages 235-242

VersaMax Nano and Micro Selection Guide

Features	Nano 10	Micro 14	Micro 23	Micro 28	Micro 20	Micro 40	Micro 64
Built-in Discrete I/O	6 in/ 4out	8 in/ 6 out	13 in/10 out	16 in/12 out	12 in/8 out	24 in/16 out	40 in/24 out
Built-in Analog I/O	1 on some models	none	2 in/ 1 out	none	none	none	none
I/O Expansion Units	none	Up to 4 units	Up to 4 units	Up to 4 units	Up to 4 units	Up to 4 units	Up to 4 units
Logic Memory (Words)	2K	9K	9K	9K	24K	24K	24K
Data Storage (Words)	256	256	2K	2K	32K	32K	32K
Scan Time (msec/K)	1.3 msec	1.1 msec	1.1 msec	1.1 msec	1.1 msec	1.1 msec	1.1 msec
Battery Backed RAM	Super Cap only	Super Cap only	Yes and Super Cap	Yes and Super Cap	Yes and Super Cap	Yes and Super Cap	Yes and Super Cap
Real Time Clock	none	none	Yes, Included	Yes, Included	Yes, Included	Yes, Included	Yes, Included
Ports Available	1 RS-232	1 RS-232	1 RS-232 and 1 RS-485	1 RS-232 and 1 RS-485	1 RS-232 and second port optional RS-232, RS-485, USB or Ethernet	1 RS-232 and second port optional RS-232, RS-485, USB or Ethernet	1 RS-232 and second port optional RS-232, RS-485, USB or Ethernet
Ethernet Option	Yes, VersaMax SE	Yes, VersaMax SE	Yes, VersaMax SE	Yes, VersaMax SE	Yes on second port	Yes on second port	Yes on second port
High Speed Counter	Up to 4 at 10Khz (16 bit)	Up to 4 at 10Khz (16 bit)	Up to 4 at 10Khz (16 bit)	Up to 4 at 10Khz (16 bit)	Up to 4 at 100Khz (32 bit)	Up to 4 at 100Khz (32 bit)	Up to 4 at 100Khz (32 bit)
Pulse Train/PWM	Up to 4 at 5Khz (16 bit)	Up to 4 at 5Khz (16 bit)	Up to 4 at 5Khz (16 bit)	Up to 4 at 5Khz (16 bit)	Up to 4 at 65Khz (32 bit)	Up to 4 at 65Khz (32 bit)	Up to 4 at 65Khz (32 bit)
Motion Commands	N/A	N/A	N/A	N/A	Find Home, Go Home, Jog, Ramp, Blended Move (4 Consecutive Moves)	Find Home, Go Home, Jog, Ramp, Blended Move (4 Consecutive Moves)	Find Home, Go Home, Jog, Ramp, Blended Move (4 Consecutive Moves)
Write Register Values to Internal Flash	No	Yes	Yes	Yes	Yes	Yes	Yes

Powerful Instruction Set

Bit Operation Functions

- Logic AND, Logic OR
- Exclusive OR, Logical Invert
- Shift Right/Left
- Rotate Right/Left
- Bit Test/Set/Clear
- Masked Compare
- Bit Position
- Bit Sequencer

Control Functions

- Do I/O
- Call
- End
- Subroutines
- Comments
- Master Control Relay
- Service Request
- PID

Table Functions

- Array Move
- Search

Data Move Functions

- Move
- Block Move
- Block Clear
- Shift Register
- Communications Request
  - Motion Moves
  - High Speed Counter
  - Serial Read/Write
  - Modbus Master

Conversion Functions

- BCD- 4
- Signed Integer
- Double Precision Signed Integer
- Real
- Real to Word
- Truncate Real Number

Math and Numerical Functions

- +, -, x, /
- Modulo division
- Scaling
- Square Root
- Trigonometric Functions
- Logarithmic/Exponential
- Convert Radians

Relation Functions

- Equal
- Not Equal
- Greater Than
- Less Than
- Greater or Equal
- Less or Equal
- Range

Relay Functions

- Contacts, Coils
- Fault and No Fault Contacts
- Alarm Contacts

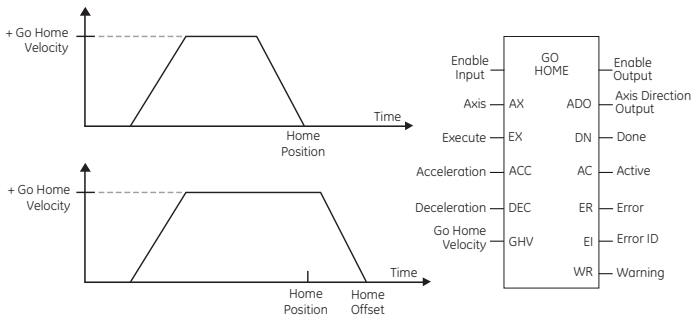
Timer and Counters

- Time-tick Contacts
- On-delay Stopwatch timer
- On-delay timer
- Off-delay timer
- Up Counter
- Down Counter

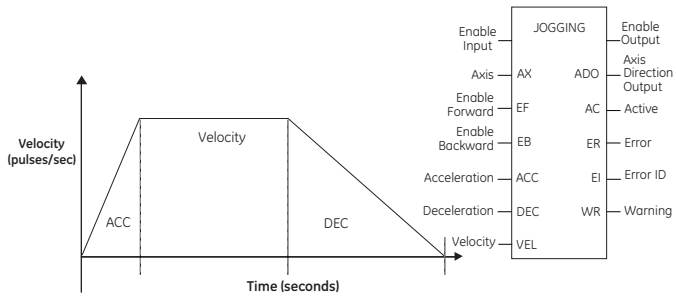
Motion Functions

- Find Home/Go Home
- Ramp
- Jog
- Blended Move
- Stop Move

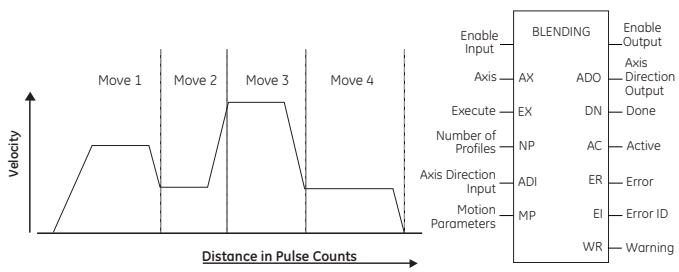
New Powerful Motion Functions



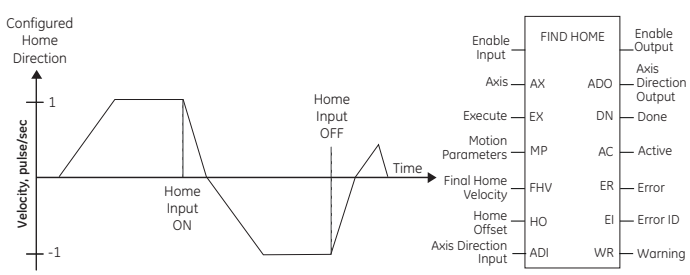
Go Home (With or without offset)



Jog



Blended Move (Up to 4 Moves)



Find Home

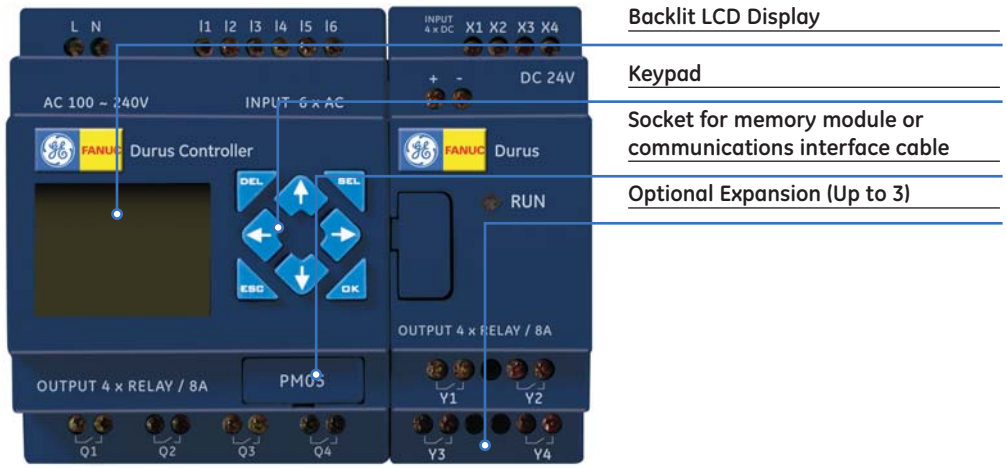
Durus* Controllers

The Durus Controllers are loaded with features such as easy to use built-in display/keypad, high current outputs, multiple communication options, and are very affordable. The Durus Controllers can be programmed using both the built-in display and keypad or with the Durus Controllers programming software. The Durus Controllers are ideal for applications that require some logic, a few timers/counters and real-time clock control. The Durus Controllers are designed for simple control applications such as light control, gate control, HVAC, pump control and much more.

Key Features:

- 8 Amp Relay Outputs, isolated
- Support for Modbus Slave, Profibus Slave and DeviceNet Slave
- Durus Controllers programming software enables the user to fully simulate the application without the hardware
- The Memory Module enables easy upgrades
- Software is free for downloading from the Web (www.gefanuc.com)
- LCD Backlit display for easy viewing in all environments

AC Models pages 244-245
DC Models pages 246-249
Discrete Expansion Units page 250
Analog Expansion Unit page 251
Communications Options page 252
Software page 253
Accessories page 254
Configuration Guidelines page 255



Durus Controllers Selection Guide

Features	Durus -10 and -12	Durus -20
Built-in Discrete I/O	6 in/ 4 out	12 in/ 8 out (AC powered models) 8 in/ 8 out (DC powered models)
Maximum Discrete I/O	18 in/ 16 out	24 in/ 20 out
Built-in Analog I/O	2 on DC powered models	4 on DC powered models
I/O Expansion Units	Up to 3 discrete and 1 analog expansion units supported	
Logic Memory	200 Lines (4 cells wide per rung) or 99 Function Blocks	
Programming Language	Ladder or Function Block Diagram	
Execution Speed	10ms/cycle	
LCD Display	4 line, 12 character LCD backlit display	
Maximum Text Displays	15	
Display Languages	English, French, German, Spanish, Portuguese, Chinese, Italian	
Real Time Clock	Up to 15 uses	
Number of Timers	Up to 15; 0.01 seconds to 9999 minutes	
Number of Counters	Up to 15; 0 to 999999 counts	
Comparator Instruction	Up to 15; Supports Less Than Equal To or Greater Than Equal To for Timers, Counters or Analog	
High Speed Input Frequency	1kHz	
PWM Output Frequency	0.5kHz (1msec On, 1msec Off)	
Modbus Slave Support Built-in	No	No; Yes on selective models
Modbus Slave Support	Yes (built-in on certain models and available for all controllers that support expansion [Modbus Slave expansion module])	
Profibus Slave Support	Yes	
DeviceNet Slave Support	Yes	
Agency Approvals	CE, C-UL, UL	
Temperature Range	0 to 55°C	

QuickPanel* Control-Europe, Middle East and Africa

GE Fanuc markets and sells QuickPanel Control products that are designed to meet the market needs of companies in Europe, the Middle East and Africa.

QuickPanel Control is designed to meet your converging control and visualization application needs with a combination of bright color TFT, or monochrome touch screens, multiple communication options and Proficy* Logic Developer—Machine Edition and Proficy View—Machine Edition software.

Features include:

- Display sizes from 6" to 15"
- Microsoft Windows® CE operating system
- Expandable memory and communication expansion cards
- CompactFlash
- Functions from data collection and trending to system security and alarming
- Built-in web server for access to data and panels via the Internet or your Intranet using any standard browser
- Communication to I/O using GE Fanuc Series 90*-30 I/O Interface, VersaMax* I/O Interface, VersaMax Micro I/O Interface, Genius* I/O Interface, Open Fieldbus and Ethernet Connectivity
- Multi-language support selectable by the operator when the system is online
- Common database for increased productivity – greatly reduces development time by eliminating the need to re-enter tag names
- Extensive library of pre-configured animation objects
- UL Class 1 Div 2 (A, B, C, D), ATEX Class 1 Zone 2, and CE Mark

Proficy Machine Edition

Proficy Machine Edition is an advanced software environment for the development and maintenance of machine level automation. Visualization, motion control, and execution logic are developed with a single programmer.

Controllers	page 264
Communications Cards	page 265
Accessories	page 266

Publication Reference Chart

GFK-2305	6 Inch QuickPanel Control (Euro-Loaded) Hardware Reference Guide
GFK-2284	12 Inch QuickPanel View & Control Hardware Reference Guide
GFK-2402	15 inch QuickPanel View & Control Hardware Reference Guide
GFK-2245	GE Fanuc Series 90-30 I/O Interface
GFK-2297	GE Fanuc Genius I/O Interface
GFK-2299	GE Fanuc VersaMax Expansion I/O Card
GFK-2270	DeviceNet Master Communication Card
GFK-2271	PROFIBUS Master Communication Card
GFK-2276	Expanded User Memory Installation Guide
GFK-2368	PCMCIA Adaptor

VersaPoint* I/O

The VersaPoint Distributed I/O system provides compact flexibility and allows users to install just the right amount of I/O needed for each application. Adhering to open communications standards including Ethernet, Profibus-DP and DeviceNet™, VersaPoint connects easily to a wide variety of PLCs, DCSs and PC-based control systems. It is ideal for packaging and materials handling applications as well as for supervisory control and data acquisition.

VersaPoint accommodates a series of discrete and analog I/O modules with densities from 1 to 16 points. It also supports a host of specialized modules, from RTD and Thermocouple inputs to positioning and counter modules.

Its compact design results in space savings up to 50 percent compared to conventional systems. The modules snap quickly and securely onto a DIN-rail, and the integrated I/O terminals and internal power bus help reduce wiring by as much as 80 percent.

Proficy* Machine Edition

Proficy Machine Edition is an advanced software environment for the development and maintenance of machine level automation. Visualization, motion control, and execution logic are developed with a single programmer.

Network Interface Module	page 282
Power Terminals	page 283
Segment Terminals	page 284
Discrete Inputs	page 285
Discrete Outputs	pages 286-287
Analog Inputs	page 288
Analog Outputs	page 289
Motion Modules	page 290
Motor Starters	page 291
Serial Communications Modules	page 292
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Publication Reference Chart

GFK-2134	VersaPoint Motor Starters Manual
GFK-2125	VersaPoint Positioning Modules Manual
GFK-1911	VersaPoint I/O System Profibus-DP NIU
GFK-1912	VersaPoint I/O System DeviceNet NIU User's Manual
GFK-2087	VersaPoint Ethernet NIU (IC220EBI001 and IC220EBI002)

QuickPanel* View

GE Fanuc markets and sells QuickPanel View products that are designed to meet the market needs of companies in the Americas and Asia Pacific.

QuickPanel View bundled visualization solution provides the tools required for today's application needs. By integrating the QuickPanel family of touch screens with Proficy* Machine Edition software, QuickPanel View delivers flexible, scalable performance on a rugged hardware platform. The intuitive environment of Proficy View – Machine Edition software helps reduce application development time, and connectivity is made easy with a family of serial, Ethernet and Fieldbus interfaces.

Features include:

- Display sizes from 6" to 15"
- Choice of Monochrome, Color-STN, or Color-TFT display
- Microsoft Windows® CE operating system
- Expandable memory and Fieldbus cards†
- CompactFlash†
- Functions from data collection and trending to system security and alarming
- Built-in web server for access to data, and panels using any standard browser†
- Communication over serial, Ethernet, and communication expansion cards†
- Multi-language support selectable by the operator when the system is online
- Shared tags for increased productivity – applications developed for QuickPanel View can share tags with other Proficy Machine Edition applications, eliminating the need to enter the data more than once
- Migration of applications developed with QuickDesigner
- Extensive library of pre-configured animation objects
- UL Class 1 Div 2 (A, B, C, D), ATEX Class 1, Zone 2, CE Mark

†Available on select models. See following pages for availability.

Proficy Machine Edition

Proficy Machine Edition is an advanced software environment for the development and maintenance of machine level automation. Visualization, motion control and execution logic are developed with a single programmer.

Operator Interfaces pages 302-304

Starter Kits pages 305-307

Communication Hardware and Accessories page 308

Publication Reference Chart

GFK-2327	6 Inch QuickPanel View (Basic) Hardware Reference Guide
GFK-2325	6 Inch QuickPanel View (Intermediate) Hardware Reference Guide
GFK-2243	6 Inch QuickPanel View (Loaded) Hardware Reference Guide
GFK-2306	12 Inch QuickPanel View (Intermediate) Hardware Reference Guide
GFK-2284	12 Inch QuickPanel View (Loaded) Hardware Reference Guide
GFK-2402	15 Inch QuickPanel View (Loaded) Hardware Reference Guide
GFK-2297	Genius I/O Communication Card Hardware Reference Guide
GFK-2270	DeviceNet Master & Slave Communication Card Hardware Reference Guide
GFK-2291	PROFIBUS Slave Communication Card Hardware Reference Guide
GFK-2276	Expanded User Memory Installation Guide
GFK-2368	PCMCIA Adaptor Hardware Reference Guide

GE Fanuc Automation Services Overview

To succeed, businesses today must be able to rely on more than just a product solution. From superior technical support, to proper implementation of your technology and training where and when you need it most, the services you receive are every bit as important as the products you put into your facility. GE Fanuc offers a complete array of support services to help you attain the highest value possible from your technology investments.

Technical Support and Maintenance

Comprehensive offerings to support the full range of your hardware and software. Our unique support solutions provide the tools, resources and experience you need to be successful.

Project and Engineering Services

Advanced engineering solutions that combine proven project application skills, industry expertise and extensive product knowledge with best-in-class partner resources.

Training Services

A flexible family of services that provides hands-on training in the location, format and style that suits you best.

Field Services

A fast, reliable on-site engineering support system designed to get your business up and running as quickly and efficiently as possible.

Spare Parts / Warranty / Factory Repair

Repair and replacement part offerings designed to protect your hardware investment.

Basic Support

In order to ensure your hardware investment is fully protected, GE Fanuc provides you with basic support for your PLC, I/O and Motion products, as well as the programming software sold with these products. Basic support includes callback telephone support consultation, online case management and access to the GlobalCare* support site. Customers can search and download hardware product manuals, articles, Frequently Asked Questions (FAQs), data sheets (functional specs), CAD drawings, service packs, firmware and IPIs from the support site, and can participate in an active online forum. Additional services in support of your complete product hardware and software investment are available by enrolling in the GlobalCare Complete Support program.

Optimizing Your Investment

Through GlobalCare Support Services, we continue to provide our customers with a comprehensive support offering that helps you realize the highest possible value from our products. And we stand behind our commitment 24 hours a day to support your enterprise.

Just as a GE Fanuc Automation solution can optimize your business, a GlobalCare Support contract can optimize your investment in our software. Contact us today to learn what we can do for you.

Note: An Extended Hardware Warranty is available upon request. Contact your GE Fanuc Sales Representative for more information.